

Characteristics of Pregnancy with Human Immuno-Deficiency Virus (HIV) and Perinatal Transmission in Nakornping Hospital

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Background: The HIV infected pregnancy delivered at Nakornping Hospital was common. To reduce and prevent HIV infection in pregnancy and perinatal transmission, the understanding of characteristics of HIV pregnancy and neonatal infective outcome were needed for proper strategy and policy making.

Objective: To study the characteristics of HIV pregnancy and neonatal infective outcome in a hospital in the northern part of Thailand.

Material and Method: This retrospective descriptive study was conducted at the Department of Obstetrics and Gynecology Unit, Nakornping Hospital, Chiang Mai Province, Thailand. Medical records of HIV infected pregnancy from the labor unit during October 2002 and September 2005 was scrutinized. The relevant data of the characteristics of HIV infected mother, pregnancy and neonatal infective outcome were collected and analyzed.

Results: There were 172 HIV infected mothers among 7,872 parturients (2.2%). The mean age was 28.2 years (range 14-44 years). Most of the cases were between 25-29 years (40%). 45 pregnancies (26%) delivered before 37 weeks. About half (50.6%) delivered via cesarean section. 22% of their newborn weighted below 2,500 grams. With antiviral regimen of Navirapine and Zidovudine for both mothers and their neonate the overall perinatal transmission rate was 4%. In mothers having ANC group the transmission rate was 3.2% compared to 11.7% in no ANC group. ($X^2 = 1.092$ $p = 0.296$ $CI 0.04-1.4$) RR of ANC group = 0.274 compare to no ANC.

Conclusion: Many of HIV infected mothers were in the young age group. High preterm labor rate was observed. The no ANC group had about 4 folds infective neonate compared to the ANC group. No antiviral drug during pregnancy in no ANC group may be a factor. This information was vital for strategic ANC planning to prevent and reduce this problem.

Keywords: HIV-infected pregnancy, Perinatal transmission

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In 1984 the first HIV patient in Thailand was found and fully reported with a sporadic case a year after⁽¹⁾. Since then the incidence of HIV infection increased rapidly and become endemic in pregnant women. The high prevalence of HIV infection among female sex workers in Chiang Mai, a northern province of Thailand was detected in 1989⁽²⁾. Many provinces reported HIV infection among pregnant women at antenatal clinics followed by cases of mother-to-child

transmission (MTCT) with increasing numbers of infected newborns came in the following years, the fourth and fifth wave of the HIV epidemic^(3,4). In untreated cases the prenatal transmission rate of HIV was 25 to 42%⁽⁵⁾. The combination of interventions including antiretroviral therapy mode of delivery and breastfeeding policy, the MTCT has now declined possibly below 1%^(6,7). In Thailand's northern region where the perinatal transmission rate is still high, it was estimated that the impact of the HIV epidemic may be the most severity⁽⁸⁾. Nakornping Hospital is a general hospital situated in Chiang Mai, a northern province of

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Thailand where the HIV infection rate was rather high and had been observed that the trend of HIV infected pregnancy (HIV Preg) delivered at Nakornping Hospital persistently increased⁽⁹⁾. To set up the management policy for prevention and reduction of perinatal HIV transmission, the baseline data such as patient characteristics, hospital care, maternal and perinatal outcomes should be known. The objective of the present study was to study the population characteristics and infective neonate outcomes of HIV Preg delivered at Nakornping Hospital.

Material and Method

The present study was a retrospective descriptive designed. All HIV Preg who came to deliver in Nakornping Hospital labor unit, Nakornping Hospital, Chiang Mai from October 2002 to September 2005 were recorded and scrutinized with no exclusion criteria. The relevant data were collected including the mother's age, gravida, parity, place of antenatal care (ANC), gestational age, and mode of delivery, birth weight and newborn infection rate. Throughout the period of the present study, HIV Preg who attended ANC at any hospital had received a standard course of antiviral regimen (AVR) while the no ANC would get Zidovudine (AZT) 300 mg and Nevirapine (NRP) 200 mg as soon as possible. A single dose NRP 2 mg per kilogram and 2 mg per kilogram per day of AZT were given to all their neonates. Double PCR HIV test (Axym/Elecxsy Elecxsy/Axym) were made to ascertain the diagnosis of HIV Preg and perinatal HIV infection despite neonate ARV. In HIV Preg with CD4 below 250 cells/mm³ was treated by a highly active antiretroviral therapy (HARRT). Descriptive statistics and chi square tests were used for data analysis.

Results

During the present study period, there were 7872 deliveries. Among these, 172 cases had HIV infection (2.2%). The HIV Preg ages varied between 14 to 44 years old with a mean of 28.2 years. The most frequent age group was between 25 to 29 years (69 cases ~40%). Among the total delivery of 7872 cases, there were 387 mothers (5%) who had no ANC. Most of them came from Myanmar and hill tribes in remote areas. The rapid test for HIV was carried out in all of these cases and the seropositive was found in 17 cases (4.4%).

155 (90%) of the HIV Preg had ANC in hospitals, primary care units or private clinics. Seventeen (10%) HIV Preg had no ANC. Most HIV Preg (125~73%) were primi-gravida and second gravida. However, 7

Table 1. Birth weight of pregnancy with HIV delivery at Nakornping hospital

Birth weight (gm)	Cases	Percentage	Cumulative %
1,000-1,499	2	1.15	1.15
1,500-1,999	7	4.02	5.17
2,000-2,499	30	17.24	22.41
2,500-2,999	52	29.89	52.30
3,000-3,499	65	37.36	89.66
3,500-3,999	16	9.20	98.85
4,000-4,999	2	1.15	100.00
Total	174	100.00	

Average birth weight = 2,890.86 gm

Note: There were two twin cesarean section

cases (4%) were fifth gravida. 28 cases (16.3%) of the HIV Preg delivered prematurely before 37 weeks of gestation. For the mode of delivery, 85 cases (49.42%) delivered vaginally and 87 cases (50.58) delivered via cesarean section. Among vaginal delivery group, 4 cases (0.23%) were assisted by vacuum extraction while the others delivered spontaneously. In the cesarean section group, 51 cases (29.6%) were elective and 36 cases (21.1%) were performed due to obstetric indications. There were two twin pregnancies and no perinatal death. The average birth weight was 2891 grams. There were 39 cases (22%) of infant weight below 2500 grams (Table 1). Eight mothers (5%) were younger than 19 and the youngest was only 14 years old. There were 27 cases (16%) who did not receive the AVR. Most of the patients received one dose (32%). Only 61 cases (35%) received the antiviral drugs more than two doses.

The overall rate of perinatal transmission was 4% (7/172). Among 155 HIV Preg with ANC 5 new born (3.2%) were infective by HIV transmitted. In no ANC group the infective transmission rate was 11.7% (2/17). While Nakornping Hospital ANC transmission rate was only 2.5%.

Discussion

The incidence of 2.2% HIV Preg during the present study in Nakornping Hospital was rather stable and no decreasing trend was observed. While a comprehensive sentinel surveillance system indicates that, the HIV prevalence among pregnant women, after reaching a peak of 2.35% in 1995, has consistently declined to reach 1.18% in 2003⁽¹⁰⁾. An explanation of the rather high incidence in Nakornping Hospital was due to the increasing referred patient from district hospitals. More and more patients of any scanty

chance of complication would be transferred to Nakornping Hospital by most “panicky” doctors in district hospitals. One striking data in this report was still about 27% of HIV Preg were over second gravida. Planned or unplanned pregnancy may need further study to set more counseling in family planning strategy.

While the mean age of HIV Preg was 28.2 years, almost 5% of the patients were less than 20 years old. This observation reflected the risk increase of sexual transmitted disease in early marriage without premarital counseling which may be common in rural areas.

To improve the outcome of HIV Preg of both mother and newborn, the Ministry of Public Health of Thailand had implemented the guideline of antiviral regimens for HIV pregnancy through out the country since 1996 and the result of first year full national program reported that 70.1% of HIV seropositive pregnancy received prophylactic antiretroviral drugs before delivery⁽¹¹⁾. All of HIV Preg in the present study took at least one dose but the rate of newborn infection was 4%, higher than the national average⁽¹²⁾. The main reason was due to many pregnant women not attend ANC. Most of the patients in this group came from remote areas such as the Thai-Myanmar border and hill tribes. The no ANC group had a transmission rate of about 4 folds of the ANC group. Though this was not statistically significant ($X^2 = 1.092$ $p = 0.296$ $CI 0.04-1.4$), the Relative Risk (RR) of ANC group was 0.274 compared to no ANC with OD Ratio of 0.25.

It is generally known that good quality ANC and antiviral regimen during pregnancy improve the outcome of both mother and newborn. Thus the coverage of ANC should be available to all pregnant women. HIV pregnancy had a higher rate of abortion and preterm labor. In the present study the data was not available for calculation of the abortion rate. The preterm delivery rate (delivery before 37 weeks of gestation) was 11.6%, higher than general, due to several reasons. Apart from socioeconomic and health status, in some cases planned cesarean section were done to reduce the rate of HIV transmission. About half of the cases delivered vaginally, which may contribute to the higher than average perinatal transmission rate. For the cesarean section group, 60% were planned. It has been proved that planned cesarean section could reduce the infection from mother to newborn⁽¹³⁾. Elective Cesarean Section is an efficacious intervention for the prevention of MTCT among HIV-1-infected women not taking antiretroviral or taking only zidovudine⁽¹⁴⁾.

However, the impact of prophylactic cesarean section when plasmatic HIV viral load is undetectable must still be evaluated⁽¹⁵⁾.

Twenty-two percent of newborns had a birth weight below 2,500 grams. Although higher than general, this rate was slightly better compared to the authors’ previous study conducted from 1992 to 1996⁽⁹⁾. Since many mothers were lost to follow-up the data on postnatal care was limited.

Conclusion

HIV infection is still common in women who delivered in Nakornping Hospital. Many of them were in the young age group. The higher rate of preterm and low birth weight was observed. The transmission rate from mother to newborn was higher than the national average due to many factors such as high rate of mothers with no ANC, no antiviral treatment during pregnancy and vaginal delivery.

Several means for the strategic planning to prevent and reduce the HIV perinatal transmission should be implemented including health education, premarital counseling and check up of HIV, ANC coverage, antiretroviral regimen, planned cesarean section, postnatal care and birth control.

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ลักษณะของหญิงตั้งครรภ์ที่ได้รับเชื้อ HIV และการถ่ายทอดเชื้อสู่ทารกในโรงพยาบาลนครพิงค์

วรพินทร์ โภมบุตตร

ภูมิหลัง: อุบัติการณ์ของหญิงตั้งครรภ์ที่ได้รับเชื้อ HIV และมาคลอดบุตรที่โรงพยาบาลนครพิงค์ ยังคงพบได้เสมอ ข้อมูลเกี่ยวกับลักษณะของหญิงตั้งครรภ์ที่ติดเชื้อ HIV และผลการตั้งครรภ์จะช่วยในการวางแผนป้องกันและลดปัญหานี้

วัตถุประสงค์: เพื่อศึกษาลักษณะความเป็นมาเป็นไปของผู้หญิงตั้งครรภ์ที่ติดเชื้อ HIV และผลของการตั้งครรภ์ต่อทารกในโรงพยาบาลนครพิงค์

วัสดุและวิธีการ: การศึกษานี้เป็นการศึกษาแบบย้อนหลังที่หน่วยสูติ-นรีเวชกรรม โรงพยาบาลนครพิงค์ จังหวัดเชียงใหม่ โดยรวบรวมข้อมูลหญิงตั้งครรภ์ที่ติดเชื้อ HIV และมาคลอดบุตรระหว่างตุลาคม พ.ศ. 2545 ถึงกันยายน พ.ศ. 2548 นำมาทบทวนอย่างละเอียด จัดหมวดหมู่จากบันทึกข้อมูลที่เกี่ยวข้องและนำมาวิเคราะห์ หากลักษณะต่าง ๆ ความเป็นมาและเป็นไป ตลอดจนผลลัพธ์การติดเชื้อ HIV สู่ทารก

ผลการศึกษา: ในช่วงเวลาดังกล่าวมีมารดาที่คลอดที่โรงพยาบาลจำนวนทั้งสิ้น 7,872 ราย เป็นผู้ติดเชื้อ HIV 172 ราย (ร้อยละ 2.2) อายุมารดาอยู่ระหว่าง 14 ถึง 44 ปี ค่าเฉลี่ย 28.2 ปี ส่วนใหญ่อยู่ในกลุ่มอายุ 25-29 ปี ร้อยละ 26 คลอดก่อน 37 สัปดาห์ ประมาณครึ่งหนึ่ง คลอดโดยวิธีการผ่าตัดคลอด พบการถ่ายทอดเชื้อ HIV จากมารดาสู่ทารก ร้อยละ 4 ซึ่งพบอุบัติการณ์นี้ร้อยละ 3 ในกลุ่มที่ได้รับการฝากครรภ์ และร้อยละ 12 ใน กลุ่มที่ไม่ได้รับการฝากครรภ์ ถึงแม้จะไม่แตกต่างกันอย่างมีนัยสำคัญทางสถิติ ($X^2 = 1.092$ $P = 0.296$ CI 0.04-1.4) แต่ความเสี่ยงติดเชื้อกลุ่มมีการฝากครรภ์ คำนวณได้ 0.274

สรุป: อุบัติการณ์ของการติดเชื้อ HIV ในมารดาที่มาคลอดบุตรที่โรงพยาบาลนครพิงค์ยังคงค่อนข้างสูง พบว่ามารดาที่ติดเชื้อมีการคลอดก่อนกำหนดสูงกว่าทั่วไป การติดเชื้อของทารกจากมารดาพบร้อยละ 4 โดยพบมากในกลุ่มที่ไม่ได้รับการฝากครรภ์กว่า 4 เท่า ข้อมูลเหล่านี้มีความสำคัญสำหรับการวางแผนกลยุทธ์ เพื่อป้องกันและลดปัญหานี้